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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,877	11/09/2001	Nathaniel E. Brese	50869	4308

21874 7590 11/05/2003

EDWARDS & ANGELL, LLP
P.O. BOX 9169
BOSTON, MA 02209

EXAMINER

JOHNSON, EDWARD M

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 11/05/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/035,877

Applicant(s)

BRESE ET AL.

Examiner

Edward M. Johnson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7-22 is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Tulloch et al. US 5,618,594.

Tulloch discloses beta CVD SiC having thermal conductivity of 300-400 W/mK (see column 3, lines 35-45).

3. Claims 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Sullivan US 6,077,619.

Sullivan discloses polycrystalline beta SiC without stacking faults (see column 6, lines 15-26).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pickering et al. US 5,374,412.

Pickering '412 discloses CVD SiC having a thermal conductivity (see Example 1).

Pickering '412 fails to disclose a value of at least 375, 375-390, or 389 W/mK.

It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to produce a thermal conductivity of 389 W/mK in the CVD SiC of Pickering because Pickering discloses a value of greater than 300 W/mK desirable for hard discs, read/write heads, and optical apparatus (abstract).

6. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tulloch et al. US 5,618,594.

Tulloch fails to specifically disclose 375-390 or 389 W/mK.

It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to produce a thermal conductivity of 375-390 or 389 W/mK in the beta CVD SiC of Tulloch because Tulloch discloses beta CVD SiC having thermal conductivity of 300-400 W/mK (see column 3, lines 35-45) for rapid sensitivity to temperature fluctuations (see column 1, lines 18-22).

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7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tulloch '594 as applied to claim 1 above, and further in view of Sullivan '619.

Tulloch '594 fails to disclose a crystalline order ratio of less than about 0.10.

Sullivan '619 discloses polycrystalline beta SiC without stacking faults (see column 6, lines 15-26).

It is considered that it would have been obvious to one of ordinary skill in the art at the time the invention was made to produce the SiC of Tulloch without stacking faults as taught by Sullivan because Sullivan discloses his production without stacking faults to improve device quality (see column 1, lines 50-61).

Allowable Subject Matter

8. Claims 7-22 are allowed.

9. The following is a statement of reasons for the indication of allowable subject matter: It would not have been obvious to one of ordinary skill in the art at the time the invention was made to orient the mandrel such that the flow of reactants is parallel to the surface of the mandrel in the methods of the instant claims 7 and 18.

Conclusion

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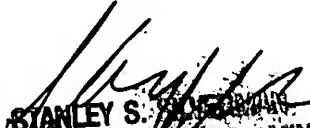
10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Goela et al. US 2002/0004444 A1 discloses a process for making free standing CVD silicon carbide without degrading thermal conductivity (see abstract, Examples).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 703-305-0216. The examiner can normally be reached on M-F 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 703-308-3837. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

EMJ


STANLEY S. SILVERMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700